

## Claims

1. A reproduction apparatus, comprising:

a reproducing means for reading information stored in a record medium and reproducing this information;

a skip-operation accepting means for arbitrarily accepting either instruction for a forward reproduction-position skip or a backward reproduction-position skip;

a skip-time determining means for making a skip time for either of the forward reproduction-position skip and the backward reproduction-position skip longer than a skip time for the other, and determining a skip time based on either of the instruction for the forward reproduction-position skip and the instruction for the backward reproduction-position skip which is accepted by the skip-operation accepting means; and

a controlling means for, if the skip-operation accepting means accepts either instruction for the forward reproduction-position skip or the backward reproduction-position skip during a reproduction in the reproducing means, then stopping the reproduction in the reproducing means, moving the position in which the reproducing means reads information from the record medium by the skip time determined by the skip-time determining means, and resuming the reproduction after the movement of the reading

position is completed.

2. The reproduction apparatus according to claim 1, characterized in that if the skip-operation accepting means accepts either instruction for the forward reproduction-position skip or the backward reproduction-position skip during a temporary stop in the reproducing means, then the controlling means moves the position in which the reproducing means reads information from the record medium by the skip time determined by the skip-time determining means, and reproduces only the first information in the reading position after the movement.

3. The reproduction apparatus according to claim 1 or 2, characterized in that:

the reproduction apparatus further includes,

a forward skip-time storing means for storing the forward reproduction-position skip time in advance, and

a backward skip-time storing means for storing the backward reproduction-position skip time in advance; and

if the skip-operation accepting means accepts the forward reproduction-position skip instruction, the skip-time determining means chooses the forward reproduction-position skip time stored in the forward skip-time storing means, and if the skip-operation accepting means accepts the backward reproduction-position skip instruction, the skip-time

determining means chooses the backward reproduction-position skip time stored in the backward skip-time storing means.

4. The reproduction apparatus according to claim 3, characterized in that the forward skip-time storing means stores in advance the forward reproduction-position skip time which is a greater value than the backward reproduction-position skip time stored in advance in the backward skip-time storing means.

5. The reproduction apparatus according to claim 3, characterized in that the backward skip-time storing means stores in advance the backward reproduction-position skip time which is a greater value than the forward reproduction-position skip time stored in advance in the forward skip-time storing means.

6. The reproduction apparatus according to claim 1 or 2, characterized in that:

the reproduction apparatus further includes,

a forward skip-operation elapse-time clocking means for clocking the time which elapses after the last instruction is given for the forward reproduction-position skip, and

a backward-skip deciding means for deciding whether or not the elapse time clocked by the forward skip-operation elapse-time clocking means has exceeded a predetermined time,

if the skip-operation accepting means accepts the backward reproduction-position skip instruction; and

if the backward-skip deciding means decides that the predetermined time has elapsed, the skip-time determining means determines a predetermined first skip time, and if the backward-skip deciding means decides that the predetermined time had not elapsed, the skip-time determining means determines a second skip time shorter than the first skip time.

7. The reproduction apparatus according to claim 6, characterized in that:

the reproduction apparatus further includes,

a first skip-time storing means for storing the predetermined first skip time in advance, and

a second skip-time storing means for storing in advance the second skip time shorter than the first skip time; and

the skip-time determining means,

if the skip-operation accepting means accepts the backward reproduction-position skip instruction and if the forward skip-operation elapse time clocked by the forward skip-operation elapse-time clocking means has exceeded the predetermined time, then chooses the first skip time stored in advance in the first skip-time storing means as the backward reproduction-position skip time, and

if the skip-operation accepting means accepts the

backward reproduction-position skip instruction and if the forward skip-operation elapse time clocked by the forward skip-operation elapse-time clocking means has not exceeded the predetermined time, then chooses the second skip time stored in advance in the second skip-time storing means as the backward reproduction-position skip time.

8. The reproduction apparatus according to claim 1 or 2, characterized in that:

the reproduction apparatus further includes,

a backward skip-operation elapse-time clocking means for clocking the time which elapses after the last instruction is given for the backward reproduction-position skip, and

a forward-skip deciding means for deciding whether or not the elapse time clocked by the backward skip-operation elapse-time clocking means has exceeded a predetermined time, if the skip-operation accepting means accepts the forward reproduction-position skip instruction; and

if the forward-skip deciding means decides that the predetermined time has elapsed, the skip-time determining means determines a predetermined first skip time, and if the forward-skip deciding means decides that the predetermined time had not elapsed, the skip-time determining means determines a second skip time shorter than the first skip time.

9. The reproduction apparatus according to claim 8, characterized in that:

the reproduction apparatus further includes,

a first skip-time storing means for storing the predetermined first skip time in advance, and

a second skip-time storing means for storing in advance the second skip time shorter than the first skip time; and

the skip-time determining means,

if the skip-operation accepting means accepts the forward reproduction-position skip instruction and if the backward skip-operation elapse time clocked by the backward skip-operation elapse-time clocking means has exceeded the predetermined time, then chooses the first skip time stored in advance in the first skip-time storing means as the forward reproduction-position skip time, and

if the skip-operation accepting means accepts the forward reproduction-position skip instruction and if the backward skip-operation elapse time clocked by the backward skip-operation elapse-time clocking means has not exceeded the predetermined time, then chooses the second skip time stored in advance in the second skip-time storing means as the forward reproduction-position skip time.

10. The reproduction apparatus according to claim 1 or 2, characterized in that:

the reproduction apparatus further includes,

a forward skip-operation elapse-time clocking means for clocking the time which elapses after the last instruction is given for the forward reproduction-position skip,

a backward skip-operation elapse-time clocking means for clocking the time which elapses after the last instruction is given for the backward reproduction-position skip, and

a deciding means for deciding whether or not the elapse time clocked by the backward skip-operation elapse-time clocking means has exceeded a predetermined time, if the skip-operation accepting means accepts the forward reproduction-position skip instruction, and deciding whether or not the elapse time clocked by the forward skip-operation elapse-time clocking means has exceeded a predetermined time, if the skip-operation accepting means accepts the backward reproduction-position skip instruction; and

if the deciding means decides that the predetermined time has elapsed, the skip-time determining means determines a predetermined first skip time, and if the deciding means decides that the predetermined time had not elapsed, the skip-time determining means determines a second skip time shorter than the first skip time.

11. The reproduction apparatus according to claim 10, characterized in that:

the reproduction apparatus further includes,

a first skip-time storing means for storing the

predetermined first skip time in advance, and

a second skip-time storing means for storing in advance the second skip time shorter than the first skip time; and

the skip-time determining means,

if the skip-operation accepting means accepts the forward reproduction-position skip instruction and if the backward skip-operation elapse time clocked by the backward skip-operation elapse-time clocking means has exceeded the predetermined time, then chooses the first skip time stored in advance in the first skip-time storing means as the forward reproduction-position skip time,

if the skip-operation accepting means accepts the forward reproduction-position skip instruction and if the backward skip-operation elapse time clocked by the backward skip-operation elapse-time clocking means has not exceeded the predetermined time, then chooses the second skip time stored in advance in the second skip-time storing means as the forward reproduction-position skip time,

if the skip-operation accepting means accepts the backward reproduction-position skip instruction and if the forward skip-operation elapse time clocked by the forward skip-operation elapse-time clocking means has exceeded the predetermined time, then chooses the first skip time stored in advance in the first skip-time storing means as the backward reproduction-position skip time, and

if the skip-operation accepting means accepts the



backward reproduction-position skip instruction and if the forward skip-operation elapse time clocked by the forward skip-operation elapse-time clocking means has not exceeded the predetermined time, then chooses the second skip time stored in advance in the second skip-time storing means as the backward reproduction-position skip time.

12. The reproduction apparatus according to claim 11, characterized in that:

the reproduction apparatus further includes,

a skip-direction storing means for storing the skip direction accepted last by the skip-operation accepting means, and

a skip-number storing means for storing the number of times at which the skip-time determining means determines the second skip time repeatedly; and

the skip-time determining means,

determines the second skip time, if the deciding means decides that the predetermined time had not elapsed and if the instruction accepted by the skip-operation accepting means indicates the opposite direction to the skip direction stored in the skip-direction storing means,

determines the second skip time, if the deciding means decides that the predetermined time had not elapsed, if the instruction accepted by the skip-operation accepting means indicates the same direction as the skip direction stored

in the skip-direction storing means and if the number of times stored in the skip-number storing means at which the second skip time is repeatedly determined has not reached a predetermined number of times,

determines the first skip time, if the deciding means decides that the predetermined time had elapsed, and

determines the first skip time, if the deciding means decides that the predetermined time had not elapsed, if the instruction accepted by the skip-operation accepting means indicates the same direction as the skip direction stored in the skip-direction storing means and if the number of times stored in the skip-number storing means at which the second skip time is repeatedly determined has reached a predetermined number of times.

13. The reproduction apparatus according to claim 6, 8 or 10, characterized in that:

a reproduction-time clocking means is further provided for clocking the reproduction time from the last skip-operation completion time to the next skip-operation start time; and

if the next skip operation is the forward reproduction-position skip, the skip-time determining means determines, as the skip time, the time which is obtained by subtracting the reproduction time clocked by the reproduction-time clocking means from either skip time of the first skip time and the second skip time.

14. The reproduction apparatus according to claim 6, 8 or 10, characterized in that:

a reproduction-time clocking means is further provided for clocking the reproduction time from the last skip-operation completion time to the next skip-operation start time; and

if the next skip operation is the backward reproduction-position skip, the skip-time determining means determines, as the skip time, the time which is obtained by adding the reproduction time clocked by the reproduction-time clocking means to either skip time of the first skip time and the second skip time.

15. A reproduction method, comprising:

a reproducing step of reading information stored in a record medium and reproducing this information;

a skip-operation accepting step of arbitrarily accepting either instruction for a forward reproduction-position skip or a backward reproduction-position skip;

a skip-time determining step of making a skip time for either of the forward reproduction-position skip and the backward reproduction-position skip longer than a skip time for the other, and determining a skip time based on either of the instruction for the forward reproduction-position skip and the instruction for the

backward reproduction-position skip which is accepted in the skip-operation accepting step; and

a controlling step of, if either instruction for the forward reproduction-position skip or the backward reproduction-position skip is accepted during a reproduction, then stopping the reproduction, moving the position in which information is read from the record medium by the skip time determined in the skip-time determining step, and resuming the reproduction after the movement of the reading position is completed.

16. A reproduction program, allowing a computer to function as:

a reproducing means for reading information stored in a record medium and reproducing this information;

a skip-operation accepting means for arbitrarily accepting either instruction for a forward reproduction-position skip or a backward reproduction-position skip;

a skip-time determining means for making a skip time for either of the forward reproduction-position skip and the backward reproduction-position skip longer than a skip time for the other, and determining a skip time based on either of the instruction for the forward reproduction-position skip and the instruction for the backward reproduction-position skip which is accepted by

the skip-operation accepting means; and

a controlling means for, if the skip-operation accepting means accepts either instruction for the forward reproduction-position skip or the backward reproduction-position skip during a reproduction in the reproducing means, then stopping the reproduction in the reproducing means, moving the position in which the reproducing means reads information from the record medium by the skip time determined by the skip-time determining means, and resuming the reproduction after the movement of the reading position is completed.

17. A computer-readable record medium in which a reproduction program is stored, allowing a computer to function as:

a reproducing means for reading information stored in a record medium and reproducing this information;

a skip-operation accepting means for arbitrarily accepting either instruction for a forward reproduction-position skip or a backward reproduction-position skip;

a skip-time determining means for making a skip time for either of the forward reproduction-position skip and the backward reproduction-position skip longer than a skip time for the other, and determining a skip time based on either of the instruction for the forward

reproduction-position skip and the instruction for the backward reproduction-position skip which is accepted by the skip-operation accepting means; and

a controlling means for, if the skip-operation accepting means accepts either instruction for the forward reproduction-position skip or the backward reproduction-position skip during a reproduction in the reproducing means, then stopping the reproduction in the reproducing means, moving the position in which the reproducing means reads information from the record medium by the skip time determined by the skip-time determining means, and resuming the reproduction after the movement of the reading position is completed.